

NEW AND ADDITIONAL HOST-FLEA ASSOCIATIONS AND DISTRIBUTIONAL RECORDS OF FLEAS FROM UTAH

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Flea collections made subsequent to publications by Stark (1958) and Parker and Howell (1959) include several noteworthy new host records and extensions of known ranges of fleas, mostly from western Utah. *Amphipsylla sibirica* ssp. and *Corrodopsylla curvata obtusata* (Wagner) are reported from the state for the first time.

Assistance of J. G. Bittmenn and J. A. Petrovich is gratefully acknowledged. H. E. Stark identified several specimens and confirmed some of my determinations. Flea nomenclature follows that of Stark (*op. cit.*) except in the genus *Monopsyllus* as revised by Johnson (1961). Mammal names, with one or two exceptions, follow Hall and Kelson (1959). Fleas are listed alphabetically. Specimens referred to are in the Ecology and Epizootology Reference Collections. The work was accomplished, in part, through a U. S. Army Research and Development contract with the University of Utah, and reported as Ecology and Epizootology Contribution No. 130.

Sorex vagrans obscurus Merriam

Monopsyllus wagneri (Baker). TOOELE Co.: South Willow Creek Canyon, Stansbury Mts., 7,000 ft.; 7 Oct., 1965. 1 ♂.

Normally shrews are infested with fleas that are fairly host-specific, such as *Corrodopsylla curvata*. This is the only flea I have found on approximately 50 vagrant shrews collected in Utah.

Sorex palustris navigator (Baird)

1. *Catallagia decipiens* Rothschild. TOOELE Co.: South Willow Creek Canyon, Stansbury Mts., 6,800 ft.; 7 Oct. 1965, 1 ♂. 2. *Corrodopsylla curvata obtusata* (Wagner). TOOELE Co.: Middle Canyon, Oquirrh Mts., 7,100 ft.; 26 Aug. 1965, 1 ♂, 1 ♀. 3. *Hystrihopsylla dippei truncata* Holland. TOOELE Co.: Ophir Creek, Oquirrh Mts., 7,000 ft.; 1 Sept. 1966, 1 ♂. 4. *Megabothris abantis* (Rothschild). *Idem.*: 31 Aug. 1966, 1 ♂. 1 Sept. 1966, 1 ♀. 5. *Peromyscopsylla selenis* (Rothschild). *Idem.*: 31 Aug. 1966, 1 ♂.

Stark (1958) listed *C. c. curvata* from *Sorex* sp.; Bear Lake, Rich Co. All fleas recovered from water shrews, except *C. c. obtusata*, represent strays from *Peromyscus maniculatus* and *Microtus longicaudus*, both of which are commonly associated with water shrews.

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Perognathus longimembris gulosus Hall

Meringis parkeri Jordan. TOOELE Co.: N base Little Granite Mt., 4,700 ft.; 24 Oct. 1962, 1 ♀.

Stark (*op. cit.*) and Parker and Howell (*op. cit.*) listed no records from little pocket mice. *Dipodomys ordii* and *D. microps* are the normal hosts of *M. parkeri* in western Utah.

Perognathus parvus olivaceus Merriam

Meringis hubbardi Kohls. TOOELE Co.: Indian Springs, W side Simpson Mt., 6,500 ft.; 13 May 1964, 1 ♂, 2 ♀. Lookout Pass, S end Onaqui Mts., 6,300 ft.; 29 Apr. - 19 May 1965, 6 ♂, 19 ♀. South Willow Creek Canyon, Stansbury Mts., 25 June 1965, 1 ♂, 2 ♀. BOX ELDER Co.: Birch Creek Canyon, Vipont Mts., 7,500 ft.; 30 June 1963, 3 ♀.

In western Utah, the range of *M. hubbardi* appears to coincide very closely with the distribution of its principal host, the Great Basin pocket mouse. In my experience, it is found only as a stray on other small mammals associated with this pocket mouse.

Perognathus formosus incolatus Hall

Meringis dipodomys Kohls. TOOELE Co.: Little Granite Mt., 4,800 ft.; 6 Nov. 1963, 1 ♂.

This species of flea is normally found on kangaroo rats. Fleas are not common on long-tailed pocket mice in western Utah.

Microdipodops megacephalus leucotis Hall and Durrant

Meringis parkeri Jordan. TOOELE Co.: N base little Granite Mt., 4,700 ft.; 5 Sept. 1962, 1 ♀; Oct. 1962, 2 ♀.

These were the only fleas recorded from more than 200 dark kangaroo mice collected over a period of several years in western Utah.

Reithrodontomys megalotis megalotis (Baird)

Rhadinopsylla sectilis (J. & R.). TOOELE Co.: Indian Springs, W side Simpson Mt., 6,500 ft.; 22 Apr. 1965, 1 ♀.

The western harvest mouse may not be one of the normal hosts of this flea. It was collected more frequently from deer mice than from other small mammals in Tooele County.

Peromyscus maniculatus sonoriensis (Le Conte)

1. *Catallagia decipiens* Rothschild. TOOELE Co.: Indian Springs, W side Simpson Mt., 6,500 ft.; 12-14 May 1964, 2 ♂, 4 ♀. *Idem.*: 22 Apr. 1965, 1 ♀. South Willow Creek Canyon, Stansbury Mts., 6,800 ft.; 7 Oct. 1965, 1 ♂. BOX ELDER Co.: Birch Creek Canyon, Vipont Mts., 7,100 ft.; 30 June 1963, 1 ♀. MILLARD Co.: Swasey Springs, House Range, 6,900 ft.; 19 July 1964, 1 ♂. 2. *Hystrichop-*

sylla linsdalei Holland. TOOELE Co.: Indian Springs, W side Simpson Mt., 6,500 ft; 23 Apr. 1965, 1 ♂. BEAVER Co.: E base Indian Peak, 6,900 ft.; 16 Sept. 1963, 2 ♂, 2 ♀. 3. *Malaracus euphorbi* (Rothschild). TOOELE Co.: Indian Springs, W side Simpson Mt., 6,500 ft.; 22 Apr. 1965, 1 ♀. 4. *Meringis hubbardi* Kohls. TOOELE Co.: Indian Springs, W side Simpson Mt., 6,500 ft.; 12 May 1964, 1 ♀. Lookout Pass S end Onaqui Mts., 6,300 ft.; 19 May 1965, 1 ♀. BOX ELDER Co.: Birch Creek Canyon, Vipont Mts., 7,500 ft.; 30 June 1963, 2 ♀. 5. *Rhadinopsylla sectilis* (J. & R.). TOOELE Co.: Indian Springs, W side Simpson Mt.; 12 May 1964, 2 ♀. Apr. 1965, 1 ♂, 1 ♀.

So many different species of fleas are found commonly on deer mice, it sometimes becomes difficult to decide which are strays. With the exception of *R. sectilis*, none of the above species have been found on deer mice collected in desert situations. I have collected as many as 7 species of fleas from a single deer mouse.

Clethrionomys gapperi uintaensis Doutt

Megabothris abantis (Rothschild). UTAH Co.: North Fork of Ashley Creek, Uintah Mts., 10,160 ft.; 26 Aug. 1962, 1 ♂.

Microtus longicaudus latus Hall

1. *Catallagia decipiens* Rothschild. TOOELE Co.: South Willow Creek Canyon, Stansbury Mts., 6,800 ft.; 25 June 1965, 3 ♂, 2 ♀; 7 Oct. 1965, 1 ♂. 2. *Epitedia stanfordi* Traub. *Idem*: 7 Oct. 1965, 1 ♂. 3. *Hystrihopsylla dippiei truncata* Holland. TOOELE COUNTY: Middle Canyon, Oquirrh Mts., 7,100 ft.; 25-26 Aug. 1965, 1 ♂, 1 ♀. South Willow Creek Canyon, Stansbury Mts., 6,800 ft.; 25 June 1965, 1 ♀. 4. *H. linsdalei* Holland. BEAVER Co.: E base Indian Peak, Needles Range, 6,900 ft.; 16 Sept. 1963, 3 ♀. 5. *Malaracus telchinum* (Rothschild). *Idem*: 16 Sept. 1963, 5 ♂, 15 ♀. 6. *Megabothris abantis* (Rothschild). TOOELE Co.: Middle Canyon, Oquirrh Mts., 7,100 ft.; 25-26 Aug. 1965, 3 ♀. 7. *Meringis hubbardi* Kohls. TOOELE Co.: South Willow Creek Canyon, Stansbury Mts., 6,800 ft.; 25 June 1965, 1 ♀. 8. *Monopsyllus eumolpi* (Rothschild). *Idem*: 25 June 1965, 1 ♂. 9. *M. wagneri* (Baker). TOOELE Co.: Indian Springs, W side Simpson Mt., 6,250 ft.; 23 Apr. 1965, 3 ♀. South Willow Creek Canyon, Stansbury Mts.; 25 June 1965, 3 ♂, 5 ♀. Middle Canyon, Oquirrh Mts., 7,100 ft.; 26 Aug. 1965, 1 ♀. 10. *Peromyscopsylla selenis* (Rothschild). TOOELE Co.: South Willow Creek Canyon, Stansbury Mt.; 25 June 1965, 2 ♂, 4 ♀; 6,800 ft.; 7 Oct. 1965, 5 ♀. Vernon Creek, Sheeprock Mts., 6,500 ft.; 24 July 1964, 1 ♀. Middle Canyon, Oquirrh Mts., 7,100 ft.; 25-26 Aug. 1965, 3 ♀.

P. selenis in combination with *H. d. truncata* and *C. decipiens* were the principal fleas infesting long-tailed voles in the higher mountains of the Bonneville Basin. These were replaced on long-tailed voles in the drier areas by *M. telchinum* and *H. linsdalei*. To date,

these two species of *Hystrihopsylla* have not been found together at any western Utah locality.

Microtus pennsylvanicus pullatus Anderson

Hystrihopsylla linsdalei Holland. TOOELE Co.: 3 mi. N Mills Junction, Tooele Valley. 4,225 ft.; 4 Feb. 1962, 1 ♀.

Microtus richarsoni mylodonotus Rasmussen & Chamberlain.

Megabothris abantis (Rothschild). UTAH Co.: North Fork of Ashley Creek, 1.2 mi. E of Hacking Lake, Uintah Mts., 10,160 ft.; 26 Aug. 1962, 3 ♂.

Lagurus curtatus intermedius (Taylor)

1. *Amphipsylla sibirica* ssp. TOOELE Co.: Indian Springs, W side Simpson Mt., 6,500 ft.; 13 May 1964, 1 ♀. Lookout Pass, S end Onaqui Mts., 6,250 ft.; 20 Apr. 1965, 2 ♀. E side Lookout Pass, S end Onaqui Mts., 5,600 ft.; 4 May 1966, 1 ♂. 2. *Malaraeus telchinum* (Rothschild). TOOELE Co.: Lookout Pass, S end Onaqui Mts., 6,250 ft.; 18 May 1965, 1 ♀. 3. *Meringis hubbardi* Kohls. *Idem.*: 6,300 ft.; 18 May 1965, 1 ♀.

These are the first published records of fleas from sagebrush voles from Utah, and the first time the genus *Amphipsylla* has been recorded in the state. The specimens very closely resemble the published description of *A. s. washingtona* Hubbard (1954) described from material collected on sagebrush voles in eastern Washington. At Indian Springs, *Lagurus* were collected in a canyon bottom, along a small permanent stream where the principal plants were big sagebrush, *Artemisia tridentata*, and big rabbitbrush. *Chrysothomus nauseosus*. Localities on Lookout Pass were more xeric in aspect, and the soil was shallower and boulder-strewn.

Zapus princeps utahensis Hall

1. *Catallagia decipiens* Rothschild. TOOELE Co.: Middle Canyon, Oquirrh Mts., 7,100 ft.; 26 Aug. 1965, 2 ♀. 2. *Megabothris abantis* (Rothschild). *Idem.*: 26 Aug. 1965, 3 ♂, 6 ♀. 3. *Monopsyllus ciliatus kincaidi* Hubbard. *Idem.*: 26 Aug. 1965, 1 ♂.

These are the first fleas recorded from the western jumping mouse from western Utah. The occurrence of *M. c. kincaidi* in the Oquirrh Mountains is interesting in that it places this flea in a locality outside the range of one of its normal hosts, *Tamiasciurus* (Stark, 1958; Hubbard, 1947). However, at least 2 species of chipmunks occur in the Oquirrh Mountains, both of which are recorded as frequent hosts of *M. c. kincaidi* from places where chickarees and chipmunks occur together (Stark, *op. cit.*).

Mustela erminea muricas (Bangs)

Monopsyllus wagneri (Baker). TOOELE Co.: South Willow Creek Canyon, Stansbury Mts., 7,500 ft.; 27 Sept. 1966, 5 ♂, 2 ♀.

Ermines and other weasels are regularly infested with fleas from their prey, a large percentage of which consists of rodents.

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